

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

RECEIVED

MAR 6 1995

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

In the Matter of

Preparation for International  
Telecommunication Union World  
Radiocommunication Conferences

)  
)  
)

IC Docket No. 94-31

DOCKET FILE COPY ORIGINAL

**COMMENTS OF E-SAT, Inc.**

E-SAT, Inc., ("E-SAT"), by its attorney, hereby respectfully submits its comments in response to the Commission's Second Notice of Inquiry, ("Second Notice") in preparation for the 1995 World Radiocommunication Conference ("WRC-95").<sup>1</sup> E-SAT is an applicant for authority to construct, launch and operate a non-geostationary mobile-satellite system in the non-voice, non-geostationary mobile-satellite service below 1 GHz (NVNG MSS).<sup>2</sup> As an applicant in the second round of NVNG MSS applications, E-SAT has a substantial interest in the preparation for WRC-95 which will address additional allocations for MSS.

**I. The Commission Should Propose Revisions to the Current MSS Allocations below 1 GHz Which Will Enhance Their Usefulness**

E-SAT strongly supports the following proposals of the Commission with regard to NVNG MSS, which will increase the usefulness of the MSS allocations below 1 GHz:

---

<sup>1</sup> In the Matter of Preparation for International Telecommunication Union World Radiocommunication Conferences, IC Docket No. 94-31, FCC 95-36, released January 31, 1995.

<sup>2</sup> See Application File No. 24-SAT-P/LA-95.

No. of Copies rec'd  
List A B C D E

249

(1) adoption of a coordination contour approach which would trigger coordination in lieu of the PFD limits in the RR 608A and 608B (Commission Proposal No. 2/L-LEO, Appendix 1);

(2) revision of the MetSat allocations in the 137.175-137.825 MHz and 127-137.025 MHz bands to provide for co-primary status for MetSats until 2006 and a secondary status until 2010 (Commission Proposal No. 2/L-LEO, Appendix 1); and

(3) redesignation of the band 149.9-150.05 MHz to the MSS service on a generic basis (Commission Proposal No. 2/L-LEO, Appendix I).

In addition, E-SAT supports the proposal of IWG-2 of the WRC-95 Industry Advisory Committee to eliminate RR 608C which provides that, in the band 148-149.9 MHz bands, MSS shall not cause harmful interference to, nor claim protection from stations of the fixed or mobile services in approximately 70 countries. As the Commission states, "[E]liminating RR 608C would align with the Voluntary Group of Expert's (VGE) attempt to eliminate footnotes to the Table of Frequency allocations. This would also require a consequential change to RR 599B to remove the "land mobile-satellite" limitation. MSS allocations should not be constrained by such limitations, if at all possible.

With regard to regulatory procedures, E-SAT concurs in the need to expand the requirements of Appendix 3 which would enable the accurate calculation of PFD levels. E-SAT believes that, along with the information currently provided in Appendix 3, a PFD "profile" should also be submitted for use by the Radio Registration Board (RRB).

## II. The Commission Should Propose Additional Allocations for MSS below 1 GHz to Support Indicated Market Demand

E-SAT urges the Commission to continue to work with the United States

government as well as private sector users of spectrum to clear U.S. proposals for additional frequency bands for MSS below 1 GHz. Additional spectrum is required to enable both the first and second round systems in the United States, as well as systems of other countries, to provide needed communications services.<sup>3</sup>

The market for NVNG MSS is expected to be significant. The currently licensed U.S. NVNG system forecasts a total global addressable market by 2000 of 15 million, and estimated that its services will capture approximately 2.6 million users by 1998. This system proposes to provide tracking, messaging, E-mail access, paging and other services, including value-added services in conjunction with GPS. In fact, the licensee recently agreed to purchase a manufacturer of GPS equipment, indicating a strong belief in the importance of the value-added GPS market.

The other pending commercial applicant in the U.S. first-round applications forecasts a total global data market of 478 million by the year 2000, of which approximately 13 million would comprise the addressable market for NVNG MSS. This system projects that it will be able to attain a subscriber level of 1.2 million by 2000.

Beyond the U.S., a number of other administrations have proposed NVNG MSS systems. These include the Taos program of the French space agency, CNES. The Taos system would provide geolocation and two-way messaging capabilities. Belgium also has proposed the ARTES system to research the possibilities of the NVNG service. Italy has conducted experiments using the satellite Temisat, designed to collect data from ground-based sensors measuring

---

<sup>3</sup> More than 25 NVNG MSS systems are at some stage of notification/coordination before the International Telecommunication Union (ITU). This number does not include the recent five U.S. applicants.

rainfall, earthquake activity and other meteorological and physical events. A first satellite was launched in August 1993 with additional satellites planned for the mid-1990s. Russia has an operational NVNG MSS system which can provide mobile packet data transmission to users located anywhere on earth. A number of GONETS satellites are already in service, with up to 36 satellites planned for the complete constellation. The GONETS systems is being used for data collection, messaging, and position-location in conjunction with GPS and GLONASS. An Australian firm, KITcom PTY Ltd, also plans to launch an NVNG system in the late 1990s.

The second round U.S. NVNG applicants propose a variety of services and provide varying market projections. These entities plan to serve a number of specific markets for NVNG MSS services, including tracking, position-location services, and metering and data-monitoring functions.

Various business and consumer trends also will stimulate the market for NVNG services. These trends include the proliferation of personal computers, particularly handheld computers (there will be 50 million portable computers in use by 1997), the continued strength in the paging industry, particularly on a global scale, and outside the U.S., and the need to monitor and protect dispersed and mobile assets with a minimum of human intervention. The explosion in the use of E-mail, largely computer based, will promote the use of NVNG MSS systems for wireless E-mail transmission.

Based on the applicants' forecasts and market studies, NVNG MSS systems will have between 5 and 6 million subscribers by the year 2000, with growth on an increased upward trend beyond that year. Consequently, assuming 500,000 subscribers per MHz, from 10-14 MHz would be required to adequately serve the market to 2001. Additional spectrum would be needed after 2001 to accommodate continued growth in demand for NVNG MSS.

<b><i>Year</i></b>	<b><i>Spectrum Available</i></b>	<b><i>Spectrum Required</i></b>	<b><i>Subscribers that could be supported</i></b>
1995	3.425 MHz		2 million
2000		10 MHz	5 million
2005		15 MHz	7.5 million

Consequently, from 8 to 10 MHz of additional spectrum is needed to accommodate the first generation NVNG MSS systems below 1 GHz.

E-SAT encourages the Commission to utilize the frequency chart provided in the interim report of the IAC. This chart is the result of a great deal of analysis of the feasibility of using selected frequency bands. While E-SAT is aware of the opposition of incumbent users, the Commission should nevertheless continue its efforts to identify spectrum to be contained in U.S. proposals to WRC-95. Because of the strong interest on the part of many other administrations in NVNG MSS below 1 GHz, it is likely that spectrum for this service will be allocated at WRC-95. The United States needs to ensure that it will be included in any such allocations. Otherwise, U.S. communications providers and users will be deprived of participation in this important new service.

### III. Conclusion

E-SAT supports the Commission's proposed revisions to the Radio Regulations to improve the existing allocations for MSS below 1 GHz, and urges the Commission to develop proposals for additional allocations, based on the work of the WRC-95 Industry Advisory Committee.

Respectfully submitted,

**E-SAT, Inc.**

By: Leslie A. Taylor

Leslie A. Taylor

Leslie Taylor Associates

6800 Carlynn Court

Bethesda, MD 20817-4302

(301) 229-9341

Its Attorney

March 6, 1995

Certificate of Service

I, Andrew F. Taylor, hereby certify that the forgoing "Comments of E-SAT, Inc." was served by first-class mail, postage prepaid, this 6th day of March 1995, on the following persons:

Kristi Kendal, Esq.  
International Bureau  
Federal Communications Commission  
2000 M Street, N.W.  
Washington, D.C. 20554

Albert Halprin, Esq.  
Halprin, Temple & Goodman  
1100 New York Avenue, N.W.  
Washington, D.C. 20036

Henry Goldberg, Esq.  
Goldberg, Godles, Wiener & Wright  
1229 19th Street, N.W.  
Washington, D.C. 20036

Robert A. Mazer, Esq.  
Rosenman & Colin  
1300 19th Street, N.W.  
Suite 200  
Washington, D.C. 20036

Raul Rodriguez, Esq.  
Stephen D. Baruch, Esq.  
Leventhal, Senter & Lerman  
2000 K Street, N.W.  
Suite 600  
Washington, D.C. 20006

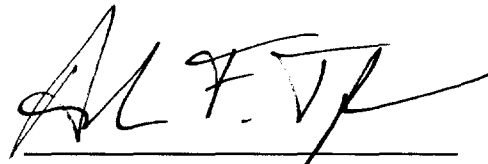
Albert J. Catalano, Esq.  
Ronald J. Jarvis, Esq.  
Catalano & Jarvis, P.C.  
1101 30th Street, N.W.  
Suite 300  
Washington, D.C. 20007

Peter A. Rohrbach, Esq.  
Hogan & Hartson L.L.P.  
Columbia Square  
555 13th Street, N.W.  
Washington, D.C. 20004-1109

Philip V. Otero, Esq.  
Vice President and General Counsel  
GE American Communications, Inc.  
Four Research Way  
Princeton, NJ 08540

Michael Ladino, Esq.  
General Counsel  
CTA Inc.  
6116 Executive Blvd.  
Suite 800  
Rockville, MD 20852

Jill Abeshouse Stern  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, N.W.  
Washington, D.C. 20037

  
\_\_\_\_\_  
Andrew F. Taylor